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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2662	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/588,632	MO ET AL.
	Examiner	Art Unit
	Donald L. Mills	2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 August 2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-5,8-12 and 15-37 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5,8-12 and 15-37 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5, 8, 9, 19-21, 23-29, and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheesman et al. (US 6,680,933 B1), hereinafter referred to as Cheesman, in view of Rekhter et al. ("Tag Switching Architecture Overview," draft-rfced-info-rekhter-00.txt), hereinafter referred to as Rekhter.

Regarding claim 1, Cheesman discloses a telecommunications switch for switching protocol data, which comprises:

Receiving connectionless and connection oriented signals from a plurality of source peripheral network elements at an ingress core network element (Referring to Figure 4, the switch **100** supporting connection-oriented and connectionless type service, receives signals at a location between access interfaces and network interfaces for traffic management. See column 8, lines 8-10.)

Determining a signaling type associated with each received signal, the signaling type comprising connectionless signaling or connection oriented signaling (Referring to Figure 5, the ingress processor **112** parses each incoming protocol data unit to determine the service to which it belongs, comprising ATM and IP/MPLS. See column 8, lines 30-33.)

Appending a transport label to each received signal at the ingress core network element based upon the determination of the signaling type, each transport label comprising an indication of the signal's signaling type (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information. See column 8, lines 42-47.)

Communicating the signals and appended transport labels toward destination peripheral network elements according to signaling procedures associated with each signal's signaling type (Referring to Figure 5, egress processor **114** parses the protocol data units received from the switching fabric **103** to determine the required type of scheduling and scheduling treatment based on the signal type for output towards the protocol data units destination. See column 8, lines 62-67.)

Cheesman does not disclose *a plurality of sub-transport labels, each sub-transport label identifying an associated node identification useful in determining a hop for a connectionless signal or a path identification useful in determining a virtual circuit for a connection oriented signal; and wherein each hop or each path identification, from the ingress core network element to an egress core network element, is associated with one of the plurality of sub-transport labels.*

Rekhter teaches tag switching allows a packet to carry not one but a set of tags, organized as a stack of tags (plurality of sub-transport labels) (See page 8, paragraph 1.) Rekhter further teaches when a packet is forwarded within a domain; the tag stack in the packet contains two tags. The tag at the top of the stack provides packet forwarding to an appropriate egress border tag switch, while the next tag in the stack provides correct packet forwarding at the egress switch (See page 8, paragraph 2.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement tag stack of Rekhter in the system of Cheesman for both connection and connectionless oriented signals. One of ordinary skill in the art would have been motivated to do so in order to reduce the delay induced by lower-layer switching thereby improving the Quality of Service of VPN traffic as taught by Cheesman (See column 8, lines 30-37.)

Regarding claim 2, the primary reference further teaches *wherein the signaling type associated with a particular signal further comprises a combination of connectionless and connection oriented signaling* (Referring to Figure 5, the ingress processor **112** parses each incoming protocol data unit to determine the service to which it belongs, comprising ATM and IP/MPLS signaling. See column 8, lines 30-33.)

Regarding claim 3, the primary reference further teaches *wherein at least some of the plurality of signals comprise Multi-protocol label switching signals, and wherein at least some of the plurality of signals comprise Internet Protocol signals* (Referring to Figure 5, the ingress processor **112** parses each incoming protocol data unit to determine the service to which it belongs, comprising IP/MPLS signals. See column 8, lines 30-33.)

Regarding claims 5, 20, and 28, the primary reference further teaches *wherein each transport label comprises:*

A format field operable to identify the signal's signaling type/a label value field containing information useful in processing the associated signal according to its signaling type (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising service-related information and a destination port. See column 8, lines 42-47.)

Regarding claim 8, the primary reference further teaches *each sub-transport label provides an instruction regarding the associated signal's communication toward one of the destination peripheral network elements* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information. See column 8, lines 42-47.)

Regarding claims 9, 21, and 29 as explained in the rejection of claims 1, 19, and 27; Cheesman and Rekhter teach all of the claim limitations of claims 1, 19, and 27 (parent claims).

Cheesman does not disclose *wherein the plurality of sub-transport labels comprise a stack of sub-transport labels, and wherein the top sub-transport label identifies the node identification useful in determining the next hop or the path identification.*

Rekhter teaches tag switching allows a packet to carry not one but a set of tags, organized as a stack of tags (plurality of sub-transport labels) (See page 8, paragraph 1.) Rekhter further teaches when a packet is forwarded within a domain; the tag stack in the packet contains two tags. The tag at the top of the stack provides packet forwarding to an appropriate egress border tag switch, while the next tag in the stack provides correct packet forwarding at the egress switch (See page 8, paragraph 2.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement tag stack of Rekhter in the system of Cheesman for both connection and connectionless oriented signals. One of ordinary skill in the art would have been motivated to do so in order to reduce the delay induced by lower-layer switching thereby improving the Quality of Service of VPN traffic as taught by Cheesman (See column 8, lines 30-37.)

Regarding claim 19, Cheesman discloses a telecommunications switch for switching protocol data, which comprises:

A first core network element comprising an ingress core network element operable to receive a signal associated with a signaling type from a source peripheral network element, the signaling type comprising connectionless signaling or connection oriented signaling (Referring to Figure 4, ingress processor **112** parses each incoming protocol data unit, from connection and connectionless sources, to determine the service. See column 8, lines 8-10 and 30-31,) *the first core network element further operable to append to the received signal a transport label including an instruction regarding how to process the signal according to the signaling type* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information. See column 8, lines 42-47.)

A second core network element operable to receive the signal with appended transport label, to examine transport label to determine the signaling type associated with the signal, and to process the signal according to the associated signaling type (Referring to Figure 5, egress processor **114** parses the protocol data units received from the switching fabric **103** to determine the required type of scheduling and scheduling treatment based on the signal type for output towards the protocol data units destination. See column 8, lines 62-67.)

Cheesman does not disclose *a plurality of sub-transport labels, each sub-transport label identifying an associated node identification useful in determining a hop for a connectionless signal or a path identification useful in determining a virtual circuit for a connection oriented signal; and wherein each hop or each path identification, from the ingress core network element to an egress core network element, is associated with one of the plurality of sub-transport labels.*

Rekhter teaches tag switching allows a packet to carry not one but a set of tags, organized as a stack of tags (plurality of sub-transport labels) (See page 8, paragraph 1.) Rekhter further teaches when a packet is forwarded within a domain; the tag stack in the packet contains two tags. The tag at the top of the stack provides packet forwarding to an appropriate egress border tag switch, while the next tag in the stack provides correct packet forwarding at the egress switch (See page 8, paragraph 2.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement tag stack of Rekhter in the system of Cheesman for both connection and connectionless oriented signals. One of ordinary skill in the art would have been motivated to do so in order to reduce the delay induced by lower-layer switching thereby improving the Quality of Service of VPN traffic as taught by Cheesman (See column 8, lines 30-37.)

Regarding claims 23 and 31, the primary reference further teaches *examining the top sub-transport label to determine that the signal comprises a connectionless signal and comparing the value in the label value field of the top sub-transport label to a node identification associated with the first network element* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal. See column 8, lines 42-47.)

Regarding claims 24 and 32, the primary reference further teaches *determining that the node identification associated with the first network element does not match the value in the label value field of the transport label and routing the signal toward the network element associated with the node identification in the label value field of the top sub-transport label*

(Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal, the comparison is made in the routing table. See column 8, lines 42-47.)

Regarding claims 25 and 33, the primary reference further teaches *determining that the node identification associated with the first network element matches the value in the label value field of the top sub-transport label; removing the top sub-transport label from the stack of sub-transport labels; and examining the next sub-transport label to determine further processing instructions* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal. See column 8, lines 42-47.)

Regarding claims 26 and 34, the primary reference further teaches *examining the top sub-transport label to determine that the signal comprises a connection oriented signal and that the label-value field in the top sub-transport label comprises a path identifier; and using the value in the label value field of the top sub-transport label to at least being establishing a virtual circuit between the first network element and another network element* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal. See column 8, lines 42-47.)

Regarding claim 27, Cheesman discloses a telecommunications switch for switching protocol data, which comprises:

A processor operable to receive a network signal from the first peripheral network element and to determine a signaling type associated with the received network signal (Referring to Figure 4, ingress processor **112** parses each incoming protocol data unit, from connection and connectionless sources, to determine the service. See column 8, lines 8-10 and 30-31,) *the processor further operable to generate a transport label including an instruction regarding how to process the signal according to its signaling type, and to append the transport label to the network signal based upon the determination of the signaling type to generate a formatted network signal* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, based upon the signal type. See column 8, lines 42-47.)

A core interface operable to receive the formatted network signal and to facilitate communication of the formatted network signal to another core network element for processing according to the sub-transport label (Referring to Figure 5, switching fabric **103** operates on the internal encapsulation protocol to route protocol data units to their destination port via the egress processor **114**. See column 8, lines 54-56.)

Cheesman does not disclose *a plurality of sub-transport labels, each sub-transport label identifying an associated node identification useful in determining a hop for a connectionless signal or a path identification useful in determining a virtual circuit for a connection oriented signal; and wherein each hop or each path identification, from the ingress core network element to an egress core network element, is associated with one of the plurality of sub-transport labels.*

Rekhter teaches tag switching allows a packet to carry not one but a set of tags, organized as a stack of tags (plurality of sub-transport labels) (See page 8, paragraph 1.) Rekhter further teaches when a packet is forwarded within a domain; the tag stack in the packet contains two tags. The tag at the top of the stack provides packet forwarding to an appropriate egress border tag switch, while the next tag in the stack provides correct packet forwarding at the egress switch (See page 8, paragraph 2.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement tag stack of Rekhter in the system of Cheesman for both connection and connectionless oriented signals. One of ordinary skill in the art would have been motivated to do so in order to reduce the delay induced by lower-layer switching thereby improving the Quality of Service of VPN traffic as taught by Cheesman (See column 8, lines 30-37.)

Regarding claim 35, the primary reference further teaches *a peripheral interface operable to receive the network signal from the first peripheral network element, and to communicate network signals received from core network elements to the second peripheral network element* (Referring to Figure 5, switch **100** comprises access interfaces **102*a***, **102*b***, and **102*c*** for reception and transmission flows to and from network interfaces **104*a*** and **104*b***. See column 7, lines 62-65.)

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheesman et al. (US 6,680,933 B1), hereinafter referred to as Cheesman, in view of Rekhter et al. ("Tag Switching Architecture Overview," draft-rfced-info-rekhter-00.txt), hereinafter referred to as Rekhter, further in view of Raj et al. (US 6,628,649 B1), hereinafter referred to as Raj.

Regarding claim 4 as explained above in the rejection statement of claim 1, Cheesman discloses all of the claim limitations of claim 1 (parent claim.) Cheesman does not disclose *at least some of the plurality of signals comprising multi-protocol label switching signals with asynchronous transfer mode, Frame Relay, or packet-over-SONET encoding.*

Raj teaches a switch control mechanism **201** is a label switch controller (LSC) that implements MPLS technology using a label distribution protocol such as LDP in conjunction with a outing protocol such as OSPF to control the flow of data packets in the form of labeled data portions, such as labeled ATM cells (See column 18, lines 4-9.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the labeled ATM cells of Raj in the system of Cheesman. One of ordinary skill in the art would have been motivated to do so in order to enhance the types of services supported to comprise labeled ATM cells.

4. Claims 10, 22, 30, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheesman et al. (US 6,680,933 B1), hereinafter referred to as Cheesman, in view of Rekhter et al. ("Tag Switching Architecture Overview," draft-rfced-info-rekhter-00.txt), hereinafter referred to as Rekhter, further in view of Rekhter et al. (US 6,526,056 B1), hereinafter referred to as Rekhter & Rosen.

Regarding claims 10, 22, and 30 as explained in the rejection of claims 1, 19, and 27; Cheesman and Rekhter teach all of claim limitations of claims 1, 19, and 27 (parent claims).

Cheesman does not disclose *wherein the sub-transport label at the bottom of the stack of sub-transport labels includes the interface identifier operable to specify the interface of the*

egress core network element between the ingress core network element processing the signal and the one or more destination peripheral network elements.

Note, the Applicant describes the interface identifier as "information specifying addresses of interfaces facilitating communication between a core network element 13 and various peripheral network elements 18-24" (See page 11, lines 16-21; page 18, lines 15-29; page 21, lines 4-14; and page 31, lines 3-16.) Therefore, the Examiner interprets the *interface identifier* as information for specifying a path through the network from the core network element to the destination network element.

Rekhter & Rosen teach that the four bytes immediately following the link-level header should be interpreted as an entry in a "tag stack." The first twenty bits should be interpreted as the tag and the twenty-fourth, bottom-of-stack-indicator bit S tells whether the packet contains any more tag-stack entries. The first 20-bit field carries the actual value of the Label, which comprises information needed to forward the packet, such as the next hop ("interface identifier," information for specifying a path through the network) and the outgoing data link encapsulation (See column 8, lines 15-20 and column 36, lines 40-46.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement tag stack of Rekhter & Rosen with the Label for forwarding the packet at the bottom of the tag stack in the system of Cheesman for both connection and connectionless oriented signals. One of ordinary skill in the art would have been motivated to do so in order to reduce the data-storage requirements of the network devices for VPN traffic as taught by Rekhter & Rosen (See column 5, lines 7-8.) And, placing the forwarding information at the bottom of the stack would enhance system processing by determining if additional processing is necessary

prior to packet forwarding. In addition, in so doing unexpected results are not produced since the position can be arbitrarily chosen.

Regarding claim 36 as explained above in the rejection statement of claim 1, Cheesman discloses all of the claim limitations of claim 1 (parent claims.) Cheesman further discloses *receiving the signals and transport labels at the egress core network element* (Referring to Figure 5, egress processor **114** parses the protocol data units received from the switching fabric **103** to determine the required type of scheduling and scheduling treatment based on the switching tag. See column 8, lines 62-67.) Cheesman does not disclose *removing the appended transport labels form each signal and communicating each signal to a destination peripheral network element.*

Rekhter & Rosen teaches PE1 forwards the packet CE1 after removing tag T3 (See column 8, lines 51-52.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement tag removal of Rekhter in the system of Cheesman. One of ordinary skill in the art would have been motivated to do so in order to reduce the data-storage requirements of the network devices for MPLS traffic as taught by Rekhter (See column 5, lines 7-8.)

Regarding claim 37 as explained above in the rejection statement of claim 19, Cheesman discloses all of the claim limitations of claim 1 (parent claim.) Cheesman does not disclose *wherein the second core network element comprises an egress core network element operable to remove the appended transport label and communicate the signal to a destination peripheral network element.*

Rekhter & Rosen teaches PE1 forwards the packet CE1 after removing tag T3 (See column 8, lines 51-52.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement tag removal of Rekhter in the system of Cheesman. One of ordinary skill in the art would have been motivated to do so in order to reduce the data-storage requirements of the network devices for MPLS traffic as taught by Rekhter (See column 5, lines 7-8.)

5. Claims 11, 12, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheesman et al. (US 6,680,933 B1), hereinafter referred to as Cheesman, in view of Rekhter et al. (US 6,526,056 B1), hereinafter referred to as Rekhter & Rosen.

Regarding claim 11, Cheesman discloses a telecommunications switch for switching protocol data, which comprises:

Receiving connectionless signals and connection oriented signals at a first network element, each signal including a transport label having a format field identifying a signaling type associated with the signal, a label value field containing information useful in processing the signal according to its signaling type (Referring to Figure 5, the egress processor **114** parses the protocol data units received from the switching fabric **103**, inherently comprising both connection-oriented and connectionless type packet data units with a switching tag comprising information of the destination port and service-related information. See column 8, lines 62-64, 32-33, and 42-47.)

A stack of sub-transport labels, each sub-transport label providing an instruction regarding the associated signal's communication toward one of the destination peripheral network element, and wherein the top sub-transport label identifies a node identification useful in determining a next hop for a connectionless signal or a path identification useful in determining a virtual circuit for a connection oriented signal (Referring to Figures 1 and 5, the ATM/IP packets, which comprise their respective header, are encapsulated with a header that contains information from the look-up and forwards the encapsulated PDU to the switching fabric **16**. See column 5, lines 45-48.)

For each signal, examining the format field of the transport label to determine the signal's signaling type (Referring to Figure 5, the egress processor **114** parses the protocol data units received from the switching fabric **103** to determine the required type of scheduling and queuing treatment based upon the type of traffic and service-related information. See column 8, lines 62-64.)

For each signal, interpreting the information in the label value field on the transport label according to the signal type (Referring to Figure 5, the egress processor **114** parses the protocol data units received from the switching fabric **103** to determine the required type of scheduling and queuing treatment based upon the type of traffic and destination port. See column 8, lines 62-64.)

For each signal, communicating the signal to another network element using signaling procedures associated with the signal's signaling type (Referring to Figure 6, the egress processor **114** transmits the protocol data unit onto the egress link **130** based upon the type of signal received. See column 9, lines 58-60.)

Cheesman does not disclose *wherein the bottom sub-transport label includes an interface identifier operable to specify an interface of an egress core network element between the ingress core network element processing the signal and the destination peripheral network element.*

Note, the Applicant describes the interface identifier as "information specifying addresses of interfaces facilitating communication between a core network element 13 and various peripheral network elements 18-24" (See page 11, lines 16-21; page 18, lines 15-29; page 21, lines 4-14; and page 31, lines 3-16.) Therefore, the Examiner interprets the *interface identifier* as information for specifying a path through the network from the core network element to the destination network element.

Rekhter & Rosen teach that the four bytes immediately following the link-level header should be interpreted as an entry in a "tag stack." The first twenty bits should be interpreted as the tag and the twenty-fourth, bottom-of-stack-indicator bit S tells whether the packet contains any more tag-stack entries. The first 20bit field carries the actual value of the Label which comprises information needed to forward the packet, such as the next hop and the outgoing data link encapsulation (See column 8, lines 15-20 and column 36, lines 40-46.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the tag stack of Rekhter & Rosen with the Label for forwarding the packet at the bottom of the tag stack in the system of Cheesman for both connection and connectionless oriented signals. One of ordinary skill in the art would have been motivated to do so in order to reduce the data-storage requirements of the network devices for VPN traffic as taught by Rekhter & Rosen (See column 5, lines 7-8.) And, placing the forwarding information at the bottom of the stack would improve the system by determining if additional processing is

necessary prior to packet forwarding. Additionally, in so doing unexpected results are not produced since the position can be arbitrarily chosen.

Regarding claim 12, the primary reference further teaches *wherein the signaling type associated with a particular signal further comprises a combination of connectionless and connection oriented signaling* (Referring to Figure 5, the ingress processor **112** parses each incoming protocol data unit to determine the service to which it belongs, comprising ATM and IP/MPLS signaling. See column 8, lines 30-33.)

Regarding claim 15, the primary reference further teaches *examining the top sub-transport label to determine that the signal comprises a connectionless signal and comparing the value in the label value field of the top sub-transport label to a node identification associated with the first network element* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal. See column 8, lines 42-47.)

Regarding claim 16, the primary reference further teaches *determining that the node identification associated with the first network element does not match the value in the label value field of the transport label and routing the signal toward the network element associated with the node identification in the label value field of the top sub-transport label* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal; the comparison is made in the routing table. See column 8, lines 42-47.)

Regarding claim 17, the primary reference further teaches *determining that the node identification associated with the first network element matches the value in the label value field of the top sub-transport label; removing the top sub-transport label from the stack of sub-transport labels; and examining the next sub-transport label to determine further processing instructions* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal. See column 8, lines 42-47.)

Regarding claim 18, the primary reference further teaches *examining the top sub-transport label to determine that the signal comprises a connection oriented signal and that the label-value field in the top sub-transport label comprises a path identifier; and using the value in the label value field of the top sub-transport label to at least being establishing a virtual circuit between the first network element and another network element* (Referring to Figure 5, ingress processor **112** encapsulates the protocol data unit with a switching tag comprising the destination port and service-related information, the PDU comprises the node information used for determining a next hop for an IP signal and a virtual circuit for an ATM signal. See column 8, lines 42-47.)

Response to Arguments

6. Applicant's arguments, with respect to claims 1-5, 8-12 and 15-37, filed August 30, 2005 have been fully considered but they are not persuasive.

Rejection Under 35 U.S.C. § 103

On page 14 of the remarks, regarding claims 1, 19, and 27, the Applicant argues neither Cheesman nor Rekhter, alone or in combination, disclose, teach, or otherwise make obvious each hop or each path identification, *from the ingress core network element to an egress core network element*, being associated with one of a plurality of sub-transport labels appended to each received signal at the ingress core network element. The Examiner respectfully disagrees. The claim recites *a plurality of sub-transport labels, each sub-transport label identifying an associated node identification useful in determining a hop for a connectionless signal or a path identification useful in determining a virtual circuit for a connection oriented signal; and wherein each hop or each path identification, from the ingress core network element to an egress core network element, is **associated** with one of the plurality of sub-transport labels.* The Examiner interprets the claim in a reasonable, broad and literal interpretation, however, the Applicant argues that the references fail to show certain features of applicant's invention, so it is noted that the features upon which applicant relies (i.e., a plurality of hops or path segments between the ingress and egress core network elements and each of the sub-transport labels identifies one of the hops or path segments) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Also by definition, Rekhter's stack of tags (plurality of sub-transport labels) (See page 8, paragraph 1,) which contains two tags, the tag at the top of the stack provides packet forwarding to an appropriate egress border tag switch, while the next tag in the stack provides correct packet forwarding at the egress switch (See page 8, paragraph 2,) are inherently **associated** with each hop or path identification since each hop or path identification is dependent upon the forwarding

tags of Rekhter. Therefore, Rekhter teaches *a plurality of sub-transport labels, each sub-transport label identifying an associated node identification useful in determining a hop for a connectionless signal or a path identification useful in determining a virtual circuit for a connection oriented signal; and wherein each hop or each path identification, from the ingress core network element to an egress core network element, is **associated** with one of the plurality of sub-transport labels.*

On page 16 of the remarks, regarding claim 11, the Applicant argues neither Cheesman, Rekhter & Rosen, alone or in combination, disclose, teach, or suggest *wherein the bottom sub-transport label includes an interface identifier operable to specify an interface of an egress core network element between the ingress core network element processing the signal and the destination peripheral network element.* The Examiner respectfully disagrees. Rekhter & Rosen teach that the four bytes immediately following the link-level header should be interpreted as an entry in a "tag stack." The first twenty bits should be interpreted as the tag and the twenty-fourth, bottom-of-stack-indicator bit S tells whether the packet contains any more tag-stack entries. The first 20bit field carries the actual value of the Label which comprises information needed to forward the packet, such as the next hop and the outgoing data link encapsulation (See column 8, lines 15-20 and column 36, lines 40-46.) Therefore, Rekhter & Rosen teach *wherein the bottom sub-transport label includes an interface identifier operable to specify an interface of an egress core network element between the ingress core network element processing the signal and the destination peripheral network element.*

On page 16 of the remarks, regarding claim 11, the Applicant argues the Examiner's interpretation of the term "interface identifier" as incorrect. The Examiner respectfully

disagrees. On page 11, lines 16-21 of the specification, the interface identifier is described as "information specifying addresses of interfaces facilitating communication between a core network element 14 and various peripheral network elements 18-24." For further examples, see page 18, lines 15-29; page 21, lines 4-14; and page 31, lines 3-16.) Therefore, the Examiner's interpretation of the *interface identifier* as information for specifying a path through the network from the core network element to the destination network element is consistent with the specification.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Mills whose telephone number is 571-272-3094. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills
DLM
November 12, 2005

JOHN PEZZLO
PRIMARY EXAMINER